DOCUMENT RESUME

ED 320 891 SP 032 446

AUTHOR Sifft, Josie M.
TITLE Educational Kinesiology: Empowering Students and Athletes through Movement.
PUB DATE Apr 90
NOTE 39p.; Paper presented at the Annual Meeting of the American Alliance for Health, Physical Education, Recreation and Dance (57th, New Orleans, LA, March 28-31, 1990).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Athletes; *Brain Hemisphere Functions; *Kinesthetic Methods; *Kinesthetic Perception; Neuropsychology; Stress Management; *Teaching Methods
IDENTIFIERS *Educational Kinesiology

ABSTRACT

This workshop is designed to provide teachers and coaches with hands-on experiences regarding the field of Educational Kinesiology (Edu-K) and its influence on learning and performance. Edu-K is a practical and dynamic method that utilizes simple body movements to integrate the functioning of the brain. It was designed by Dr. Paul Dennison in 1981 by utilizing techniques and information from many different fields, including yoga, acupuncture, growth and development, and brain research. Dennison suggests that when the individual is under stress, the body tends to act from only one hemispheric mode, thus eliminating the proper balance needed for optimal functioning. Edu-K activities, called "Brain Gyms" are used to balance the hemispheres, thereby allowing them to work more efficiently. They reduce the blockages caused by stress and allow the body to function in its optimal state. Recent studies regarding Edu-K have indicated positive shifts in learning and performance in the areas of reading, writing, mathematics, balance, and response time as a result of utilizing the "Brain Gym" activities. A number of line drawings, charts, and explanations suitable for making overhead projector transparencies are included. (Author/JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED320891

EDUCATIONAL KINESIOLOGY: EMPOWERING STUDENTS AND ATHLETES THROUGH MOVEMENT

by

Josie M. Sifft, Ph.D.
California State Polytechnic University, Pomona

A presentation given at the 57th Annual Conference of the American Alliance for Health, Physical Education, Recreation, and Dance in New Orleans

April 1, 1990

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J. M. Sifft

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP 032 446

BEST COPY AVAILABLE

Empowering Students and Athletes Through Movement

This workshop is designed to provide teachers and coaches with hands-on experiences regarding the field of Educational Kinesiology (Edu-K) and its influence on learning and performance. Edu-K is a practical and dynamic method which utilizes simple body movements to integrate the functioning of the brain. It was designed by Dr. Paul Dennison in 1981 by utilizing techinques and information from many different fields, including yoga, acupuncture, applied kinesiology, neurolinguistic programming, psychology, growth and development, and brain research. Dennison suggests that when the individual is under stress, the body tends to act from only one hemispheric mode, thus eliminating the proper balance needed for optimal functioning. Educational Kinesiology activities, called "Brain Gyms," are used to balance the hemispheres, thereby allowing them to work more efficiently. They reduce the blockages caused by stress and allow the body to function in its optimal state. Recent studies regarding Edu-K have indicated positive shifts in learning and performance in the areas of reading, writing, mathematics, balance, and response time as a result of utilizing the "Brain Gym" activities.

First, let me introduce you to Educational Kinesiology. Then, I will provide you with an overview of the presentation.

Educational Kinesiology is also referred to as Edu-Kinesthetics or Edu-K for short. Edu-K is based on the notion that "movement is the door to learning." It is the integration of knowledge from a variety of areas: brain research, child development, learning theories, acupuncture, neuro-linguistic programming, yoga, learning disabilities, vision training, etc.

Paul Dennison, the founder of the program has identified specific movements, which he has called Brain Gym™, which have been used to enhance learning and performance and to remove learning blocks. These were designed to integrate the brain for optimal functioning in three dimensions: left/right, back/front, and top/bottom.

Now, here is an outline of today's presentation:

Brief history of hemisphericity and specificity
Development of Educational Kinesiology and BRAIN GYM™
Dimensions of brain function
Laterality profiles and dominance patterns
Research using BRAIN GYM™
BRAIN GYM™ activities
Dennison Laterality Repatterning
Edu-K balances for improving learning and performance

Let's begin with a brief look at the history of the study of hemisphericity. Back in 1844 an English physician, A.L. Wigan published an account of the illness, death, and autopsy of a friend and patient who had seemed normal in every respect, and had only one cerebral hemisphere. His book was titled, Duality of the Mind. In the 1860's a French surgeon, Paul Broca did an examination of the brains of various patients who had had speech problems or paralysis by stroke affecting the left hemisphere. Since that time, a specific location in the left hemisphere has come to be known as Broca's language center. About ten years later, Carl Wernicke, a German neurologist discovered a second and rather different speech center. This center was involved in the process of conveying meaning, whereas Broca's center involved articulation. At about the same time, a French neurologist, Joseph Jules DeJerine suggested that the

corpus callosum plays an important role in communication between the hemispheres. (Restak, 1979)

Then it wasn't until the 1940's that interest in the brain was again rekindled by the work of Luria, Bernstein, and others in Russia, and the birth of neuropsychology occurred with increased work in the area of mapping the brain function. Oliver Sacks (1985) suggests that there are 1000 descriptors of left hemisphere syndromes in neuropsychological literature to every one of right hemisphere syndrome.

> One important reason for the neglect of the right, or 'minor' hemisphere, as it has always been called, is that while it is easy to demonstrate the effects of variously located lesions on the left side, the corresponding syndromes of the right hemisphere are much less distinct. It was presumed, usually contemptuously, to be more 'primitive' than the left, the latter being seen as the unique flower of human evolution. And in a sense this is correct: the left hemisphere is more sophisticated and specialised, a very late outgrowth of the primate, and especially hominid, brain. On the other hand, it is the right hemisphere which controls the crucial powers of recognising reality which every living creature must have in order to survive. (p. 4)

He continues to say that right hemisphere syndromes are as common as the left hemisphere syndromes. Also he indicates that classical neurology suggests that any brain damage reduces the abstract and categorical attitude, reducing the individual to the emotional and concrete. His work with Dr. P indicates the opposite is possible as well. Dr. P. lost the emotional, personal, and "the real" and was reduced to the abstract and categorical, only being able to recognize detail without seeing the whole picture.

Richard Restak (1979) supports this notion in a description of two of his patients with right hemisphere disease.

> In fact, the right hemisphere is not 'minor' at all. In essence, it is the right hemisphere that enables us to maintain a constant sense of who we are. When this is disturbed we may fail to incorporate important parts of the world and lose our sense of direction, ignore things off to the left, even have delusions that parts of our body

> don't belong to us. In addition, we may fail to grasp important distinctions. A wedding picture, for instance, may be interpreted as a funeral because 'the woman is wearing a veil and several people in the picture are crying.' Psychobiologists blame such failures on an inability to grasp a situation in its entirety. This capacity ordinarily depends on an intact and functioning right hemisphere. In summary, our perception of meaning, body scheme, and certain aspects of our sense of identity are disrupted in diseases affecting the right hemisphere. (p. 195)

More familiar to many people, is the work of Roger Sperry, Michael Gazzaniga, and others with split brain subjects. When different figures are flashed to the left and right visual fields, the split brain subject reacts with an apparent doubling of conscious awareness. For example, what is seen by the left eye can be drawn by the left hand, but can not be identified verbally, since the right visual field has identified a different object.

Dr. David Galin has suggested that the right hemisphere's performance is similar to the operation of Freud's "Unconscious". Both deal with images which cannot be ordinarily verbalized and depend upon a perception of the total picture or gestalt, rather than on logical analysis.

> "...each hemisphere is specialized for a different cognitive style- the left for an analytical, logical mode in which words are an excellent tool, and the right for a holistic, Gestalt mode, which happens to be particularly suitable for spatial relations." (Restak, 1979, p. 199-200)

Galin also suggests that the results that happen when the corpus callosum is cut may also result by inhibition of neuronal transmission. In the case of a child being reprimanded by a parent, the verbal message given to the child is "I'm doing this because I love you," while the body language and tone of the voice of the parent is saying, "I hate you." The left hemisphere might want to respond by drawing closer to the loving parent, while the right has the message to run away. This might explain the ambivalence some people feel in conflict situations.

The work of Max Suburi (Restak, 1979) and Gary Schwartz (Ferguson, 1983) indicate that the right brain is favored by subjects for memory storage of emotionally charged information, particularly negative emotion. Schwartz suggests that this is particularly so for people with high levels of anxiety. EEG activity is greater in the frontal lobe on the left in response to happy faces, and on the right with sad faces.

Marion Diamond (1990) presented some interesting research Wednesday evening here at the conference regarding the role of the thymus in the immune system and the relationship to the thickness of the right cerebral cortex. She also indicated that the cortex is influenced by opiate receptors and that Chinese researchers are now investigating the influence of acupuncture on these receptors. The work of Geschwind and Behan (1982) has also suggested a correlation between right brain dominance and auto immune diseases, particularly in males.

The research of David Shannahoff-Khalsa at the Salk Institute indicates that hemispheric activity is related to breathing patterns.

> EEG responses have shown a consistent relationship between nasal airflow and cerebral dominance on all frequencies (alpha, theta, delta, and beta)... When airflow is more free in one nostril, the opposite hemisphere is currently dominant. Forceful breathing through the more congested nostril awakens the less-dominant hemisphere. (Ferguson, 1983, p. 3)

The final bit of research which relates to the Edu-K process is that of Raquel and Rubel Gur (1977) with regard to eye movement preferences in response to coping with conflict, and the more recent work of Bandler and Grinder (1979) in the field of Neuro-Linguistic Programming which explores eye movements in accessing memory.

In summarizing this research, the following conclusions can be made:

1. The right and left hemispheres do serve different functions and provide us with different perceptions. Left: logical, analytical, sequential, EGO

Right: gestalt, meaning, identity, Unconscious

2. The hemisphere which takes charge is situation specific, but hemispheric specialization may be genetically determined.
3. The gestalt hemisphere is favored for memory storage of emotionally charged material.
4. There is a link between the immune system and right hemisphere functioning.
5. Hemispheric activity can be consciously altered through specific breathing patterns.
6. Eye movement preference may have an important role in accessing the hemispheres.

Now, let's turn to the development of Educational Kinesiology. Paul Dennison completed his doctorate in Education at USC with research on reading achievement and its relationship to brain development. For 19 years he directed the Valley Remedial Group Learning Centers in southern California. In the early 1980's he founded the Educational Kinesiology Foundation, a non-profit organization dedicated to helping people overcome learning problems to achieve their optimal performance.

He has utilized the information available regarding hemispheric function, and emphasizes that it is not the Right or Left which is critical, but the integration of the two hemispheres.

> The human being is uniquely designed to be either bilaterally integrated (two-sided) or homolaterally specialized (one-sided). Our species has evolved to be two-sided for most movement skills. Our two-sidedness (for vision, hearing, hand-eye coordination and whole body movement) allows us to compensate with one side when the other side is lost or injured. If we rely too much on one side alone, instead of two sides together, we place unnecessary and stressful demands upon our whole system. We call this the 'switched-off' state. (Dennison and Dennison, 1989b, p 46a)

Edu-K deals with three dimensions of brain-function: laterality, focusing, and centering. The laterality dimension deals with the left and right hemispheres, the ability to work in the midline, to cross the midline, and to process linear code. People with difficulty in this dimension have traditionally been labeled as learning disabled. The

focus dimension deals with the back brain/ front brain relationship, allowing the person to concentrate, focus attention, retrieve information from memory, etc. Individuals who have been identified as hyperactive or who seem to have a very short attention span may have difficulty in this dimension. The centering dimension is geared toward top/bottom brain activity, in particular the role of the brain stem and cerebellum. This dimension provides a sense of overall balance, body coordination, emotion, and abstract thought. In common terms, a person might feel grounded or spacey as a result of the function of the centering dimension. Dennison suggests that what most people recently have attributed to the right brain is really the result of the focus dimension, the back brain- front brain integration that occurs in the Common Integration Area, which is actually a part of the left hemisphere. (Dennison and Dennison, 1988)

Today's presentation will focus on the laterality dimension, the ability to integrate right and left brain activity. Dennison indicates that what is important is bilateral integration.

> The first step toward the integrated state is bilateral integration, where one has access to both right and left hemispheres at the same time, and therefore, both eyes, both ears, and both sides of the body. (Dennison and Dennison, 1988, p. 12)

The work of Edu-K supports the notion that brain dominance is hereditary, and that eye dominance is a better determinant of brain dominance than handedness. Edu-K work with various individuals suggests that 50% of humans are left-brain dominant, while the other 50% are right-brain dominant, just as the animal population is split between right and left paw dominance. Let's take a minute and do a quick eye dominance check. Find someone about ten feet away from you and look at them through a triangle formed by your hands at eye level. Have them tell you which eye you are using as the dominant eye. This is a much easier method than the old "close one eye and see if the object moves" approach.

Educational Kinesiology considers both whether an individual is right or left hemisphere dominant, and where the analytic and gestalt brain functions are located for the individual. As far as I

know, this has not been explored by other researchers. In order to understand the difference, let's look at a variety of laterality profiles and dominance patterns.

The first is called "Uniform Dominance". (See Figure 1.) This is the pattern which has traditionally been considered normal: left brain dominant, with the left hemisphere functioning analytically, and right handed, right eyed, and right eared. So the left brain is controlling the right side of the body. People with this profile usually do well academically, with little stress on the system. However, they may experience some difficulty in visualization, imagination, creativity, and relaxation skills.

The second profile, Mixed Dominance, invites confusion as the dominant hand is located on one side of the body, and the dominant eye and/or ear is located on the other side. (See Figure 2.) This is particularly true if a person is left-eye dominant and right-handed. The person attempts to compensate when reading by switching off the dominant left eye in order to lead with the right eye, thereby making visual memory and gestalt skills unavailable. About 50% of the learning disabled population and the majority of dyslexics are cross or mixed dominant. Many gestalt-brain dominant children are farsighted and left-eye dominant, making it difficult to function effectively when asked to sit at a desk and do close range work (reading and writing) of an analytical and sequential nature. Approximately 80% of delinquents and the prison population also fall into this category, as well as the geniuses who have trouble fitting into a left-brained society. Dennison found that about 60% of the students at the Learning Centers were mixed dominant.

The Blocked Dominant individual is dominant in one hemisphere and uses the hand, eye, or ear controlled by the non-dominant hemisphere, particularly when under stress. (See Figure 3.) For example, an individual may be right handed, right eyed, right eared, and right brained. This was the case for Lisa, a senior in high school who was a gifted artist and musician. As she became more concerned with competing for admission to a prestigious college, she switched off the gestalt hemisphere and relied on the analytic hemisphere, resulting in a loss of the flow and intuition in her art

and music and changes in her personality. (Dennison and Hargrove, 1985)

Dennison refers to an individual who is utilizing only one side of the brain as homolateral. The homolateral person can learn and repeat material skillfully, and thrives on rote memorization and conditioned behaviors. I'm sure you've seen athletes like this as well- the movement technique is technically correct, but the movement itself lacks fluidity, spontaneity, and "life".

Robert Eyestone, an educational psychologist in Utah collected data regarding different populations and whether they were using both hemispheres of the brain or had switched off to a one-sided state. (See Table 1.) Normal students and staff were found to be 87% and 92% heterolateral respectively. Notice the shift in the other populations: learning disabled, resource, detention centers- indicating between 92% and 98% homolateral functioning. The last row, those students being referred for testing, indicates that 43 of the 48 students were homolateral. (Dennison, 1988).

As mentioned previously, Educational Kinesiology deals with both dominance of hemisphere and dominance in function. The following profiles indicate a situation called "Transposed Hemispheres." Figure 4 shows a blocked dominance pattern on the right side of the body, but the right brain mode is the logical, analytical, sequential, language functioning (rather than the creative). Neurologists estimate about 5% of the population have transposed hemispheric functioning, mostly left-handers. The work of Edu-K suggests there are many more individuals with this reversal, including many right-handers. The person with this dominance profile would switch off the dominant language brain when accessing information visually, auditorally, or in writing, again causing learning difficulties particularly when under stress.

The final profile is another special case- transposed hemispheres and mixed dominance. (See Figure 5.) Although the person is left-brain dominant, the left brain in this case serves a gestalt function. Being left-eared, the person hears for detail, as information from the left ear goes to the right hemisphere, which is the language center in

this case. Right eye dominance allows the individual to see the picture, accessing the gestalt left brain.

In learning both fine and gross motor skills, the ana hemisphere is usually dominant early on in learning. Take a piec paper and draw a circle. Most of you probably drew the c moving in a counter-clockwise direction. For you, the circle i automated response, controlled by the gestalt brain. Young chil will draw moving in a clockwise direction, moving very slowly, analyzing and correcting each piece of the circle. Many of you probably heard, "paralysis by analysis", where coaches get pla thinking so much about the details of the movement that they perform it effectively any more. The motion becomes mechanical until it is again automated through continued practice

Betty Edwards (1986) used a similar notion in her work, Drav on the Right Side of the Brain. She attempted to get people to ac the gestalt hemisphere which sees the total picture when draw rather than the analytical, detail-oriented mode. In this way, could see the relationships developed as they drew rather disconnected points on a page.

To get us back on track- the key to the Edu-K proces integration of the brain in all dimensions, so that individuals have to function from these homolateral states. Rather, it becom choice based upon the situation at hand as to what will be the efficient mode of functioning. In terms of basic survival, the needs to react from reflex, without unnecessary processing time. is important to remember that each person has a partic dominance pattern, and therefore, a specific learning style whic most effective. No two brains are identical, just as our fingerp are different.

Let's examine the research regarding the movement activ designed by Dennison to enhance performance through b integration. The BRAIN GYM™ activities are categorized dimension (See Table 2.) Midline Movements, Lengthe Activities, and Deepening Attitudes represent the three b dimensions, respectively: laterality, focusing, and centering. Energy Activities are designed to activate all of the dimensions.

G.C.K. Khalsa (1986) did the first quantitative study with movement skills using the Brain Gym™ activities. Before that time, there were anectodal studies suggesting improvements in reading, writing, math, etc., but nothing with performance of psychomotor skills. Her thesis examined the use of Brain Gym™ activities and a specific procedure called, Dennison Laterality Repatterning on the static balance of learning disabled students aged 7 to 11 years. She utilized a 6-week program, with the children doing the Edu-K movements twice a day for 5 minutes, 5 days per week. The movements included: cross-crawl, cook's hook-up, positive points, and thinking cap from the Brain Gym™ program. Three groups were randomly assigned: Repatterning and Brain Gym™, Brain Gym™, and a Control. The results indicated that both the Edu-K groups improved significantly more than the Control, and the Repatterning group showed the greatest improvement.

After completing her Master's work, Guruchiter and I decided to continue the research with Edu-K using a college population performing on a novel motor task. We again utilized the three groups as above, but this time used only a 10 minute experience rather than a 6-week program, in order to see if immediate results are evident after doing the Brain Gym™ activities. Students were pretested on a simple and four-choice response time task to a visual stimulus. Group one experienced Dennison's Laterality Repatterning, then groups one and two did 10 minutes of Brain Gym™, including: brain buttons, balance buttons, thinking caps, lazy 8's, and calf pumps. The Control group sat quietly during this time. All groups were then postested on the simple and 4-choice response task again. Results indicated a significant difference between the groups on the 4-choice task, with the Repatterned group improving by 6%, the Brain Gym™ only group by 3.5%, and the Control group by 1%. These changes suggest that when the individual is integrated, processing time may decrease, resulting in decreases in response time.

Our latest work is not totally complete at this time, but preliminary findings suggest that Brain Gym™ activities might also prove helpful with improving the hearing of adults. Sixteen teachers were tested by the school nurse on the pure tone audiometer. They

then performed either the Brain Gym movements or random movements for 10 minutes, and were retested on the audiometer. The Brain Gym™ movements included the owl, thinking cap, elephant, balance buttons, and brain buttons. Nine of the 16 subjects showed improvement of 10 dB or more on at least one threshold level after the Brain Gym™ activities, while only 3 of the 16 showed improvement with the random movements and 4 showed decrements in performance. No differences were found by ear, threshold level, or interactions.

The above research has provided clear evidence that performing the Brain Gym™ movements for as little as 10 minutes can enhance the performance of children, young adults, and adults on a variety of tasks. We are looking forward to continuing our research efforts with a greater variety of tasks.

Now that we've looked at some of the results, let's take a look at the Brain Gym™ activities by category. (Dennison and Dennison, 1989a). First are the Energy Activities.

Water is listed first since it is critical for proper conduction of electrical activity in the body. Under times of psychological or environmental stress, the body cells tend toward dehydration. Water is most easily absorbed at room temperature, with a 144 pound person requiring about 6 glasses per day. Drinking coffee adds to the water deficit by about 2 glasses for each cup of coffee.

Brain Buttons involve two acupuncture points, K 27 and Cv 6, which are to be stimulated for 20-30 seconds by massaging them gently. They may be tender to the touch at first. (See Figure 6.)

Earth Buttons also incorporate two points on the body, one under the lower lip and the other on the pubic bone. These are the beginning and end points of the Central acupuncture meridian, representing the Yin flow of energy. It is thought to be related to brain stimulation and relief of mental fatigue. (See Figure 7.)

Space Buttons incorporate the beginning and end points of the Governing meridian, GV 1 and GV 26, the upper lip and the tip of the tailbone. It represents the Yang flow and is thought to stimulate cooling of the brain with the flow of cerebral spinal fluid, and promotes centering and grounding. (See Figure 8.)

Balance Buttons are utilized as a quick balance for all dimensions, but particularly for relieving back to front switching off due to stress. The person holds the point just behind the mastoid process and the navel for about 30 seconds. (See Figure 9.)

The Energy Yawn is designed to relax tensions in the jaw and head by utilizing the body's natural reflex to increase body respiration. Over 50% of the neurological connections from the brain pass through the jaw joint. Find the jaw joint, drop the jaw comfortably, and make a deep, relaxed yawing sound. Repeat 3-6 times. (See Figure 10.)

Thinking Cap stimulates over 400 acupuncture points on the ears by gently massaging from the top of the ear down to the bottom 2 or 3 times. It is particularly effective for the integration of the language systems, and is thought to stimulate the reticular formation. (See Figure 11.)

The next category of Brain Gym™ movements is called Deepening Attitudes and includes two activities, Cook's hook-up and positive points. Cook's Hook-up was invented by Wayne Cook as a way to counterbalance the negative effects of pollution by getting the body energy to flow in a figure eight. This position activates both the upper and lower meridians. It is done in two phases. In phase I, one leg is crossed over the other, with the hand that you write with grasping the opposite ankle, and the other hand on the ball of the foot. This position is held for approximately one minute. Then in Phase II, the legs are uncrossed and the hands are brought together about the heart level with the fingertips touching. (See Figure 12.)

Positive points require a gentle pressure on the neurovascular holding points above each eye, on the forehead where your horns would have come out. This is thought to bring energy to the frontal lobes while balancing the stomach meridian and the emotional energy. Children will calm down in a matter of a couple minutes as a result of gently holding these points. (See Figure 13.)

Due to the time constraints, we won't look at all of the Brain Gym™ movements from each dimension. However, I would like to call your attention to the cross-crawl from the laterality dimension, which we saw earlier, and also to the calf pump from the focusing

dimension. The calf pump is similar to the calf stretch which many of us learned in physical education (with palms against a wall, one foot extends back with the heel pressing against the floor in order to stretch the gastrocnemius and the soleus).

As mentioned in the research findings, Brain Gym™ activities are effective for enhancing performance, but if the person has experienced Dennison Laterality Repatterning (the lateral integration of the hemispheres) the movements are even more effective. The procedure consists of a pre check to identify whether the person is functioning from integration or from a switched off state, the repatterning process itself, and a post check to allow the individual to experience the change. (See Figure 14.)

Before doing the repatterning, it is helpful to go through a 4-step process called PACE, which includes drinking some water, doing the brain buttons, cross crawl, and Cook's hook-up, as I described earlier. When working with an individual, you can use the deltoid muscle as a biofeedback system to identify the body position required for optimal effectiveness, for example, whether the cross-crawl should be done with the eyes focused up to the left or up to the right. Using a muscle as a feedback system is called "muscle checking" in Edu-K. Muscle checking allows the individual to experience a clear indication from the body of the influence of the movement on the total system. However, the Repatterning Process can also be done without the use of the feedback system.

Once an individual has experienced Dennison Laterality Repatterning, Edu-K utilizes sequences of movements called Action Balances which are geared to a specific goal which the individual has identified. Goals need to be positively stated, use words describing action, be clear enough for a child to understand, and inspire the person to act upon them. Two examples are the Action Balance for Listening and the Action Balance for Whole Body Movement. (See Figures 15 and 16, respectively.) The Action Balance sequence consists of doing the PACE process, setting a goal, doing an action to serve as a pre-check, performing the appropriate Brain Gym™ movements, and repeating the action as a post-check to identify that the body has incorporated the change. Again, it is important to

experience the difference before and after integration, as Educational Kinesiology is designed as an educational tool, not just a way of changing performance.

In closing, I want to share a movement sequence that can be utilized on a daily basis for yourself or with your students and athletes. It's called the seven minute tune-up, and is designed to keep the body functioning from the integrated brain state, by which both hemispheres are working in harmony. (See Figure 17.) It consists of drinking some water and breathing correctly as you experience the following: brain buttons, Cook's hook-up, positive points, integrated movement, and the cross crawl.

Best wishes for empowering your students and athletes to perform to their maximum with the help of Educational Kinesiology.

References

Bandler, Richard and Grinder, John (1979). Frogs Into Princes. Moab, UT: Real People Press.

Dennison, Gail (1988). Heterolateral or homolateral processing, Brain Gym Magazine, 2 (2), 2.

Dennison, Paul and Hargrove, Gail. (1985). Personalized Whole Brain Integration. Glendale, CA: Edu-Kinesthetics.

Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.

Dennison, Paul and Dennison, Gail (1988). Edu-Kinesthetics: Whole Brain/Body Integration: Advanced Class Manual. Glendale, CA: Edu-Kinesthetics.

Dennison, Paul and Dennison, Gail (1989). Brain Gym Teacher's Edition. Glendale, CA: Edu-Kinesthetics.

Dennison, Paul and Dennison, Gail (1989). Brain Gym Handbook. Glendale, CA: Edu-Kinesthetics.

Diamond, Marian (1990) "Use It or Lose It: Enriched Environments, Exercise, and the Ever Changing Brain," R. Tait McKenzie Memorial Lecture presented at the National Convention of AAHPERD in New Orleans.

Edwards, Betty (1986). Drawing on the Artist Within. New York: Simon and Schuster.

Ferguson, Marilyn (1983). Breathing cycle linked to hemispheric dominance. Brain/Mind Bulletin, 8 (3), 1,3.

Ferguson, Marilyn (1983). Positive, negative feelings may reflect specialization of brain hemispheres. Brain/Mind Bulletin, 8 (3), 1,3.

Geschwind, N. and Behan, P. (1982). Left-handedness: Association with immune disease, migraine, and developmental learning disorder. Proceedings of the National Academy of Sciences, 79, 5097-5100.

Gur, Raquel and Gur, Rubel (1977). Correlates of conjugate lateral eye movements in man. In S. Harnad, R. Doty, L. Goldstein, J. Jaynes, and G. Krauthamer (Ed.), Lateralization in the Nervous System. New York: Academic Press.

Khalsa, Guruchiter Kaur (1986). Effect of Educational Kinesiology upon Static Balance of Learning Disabled Students. Unpublished master's thesis, California State Polytechnic University, Pomona, CA.

Restak, Richard (1979). The Brain: The Last Frontier. New York, Warner Books.

Sacks, Oliver (1985). The Man Who Mistook His Wife for a Hat. New York: Harper and Row.

Figure 1. Laterality Profile Which Illustrates Uniform Dominance.

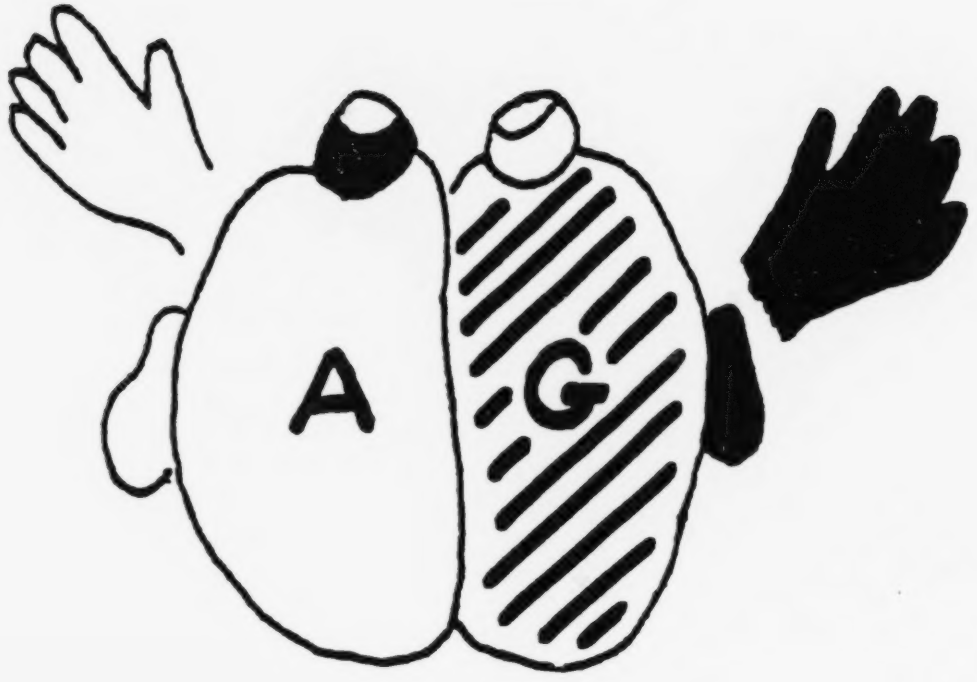

Figure 2. Laterality Profile Which Illustrates Mixed or Cross Dominance.

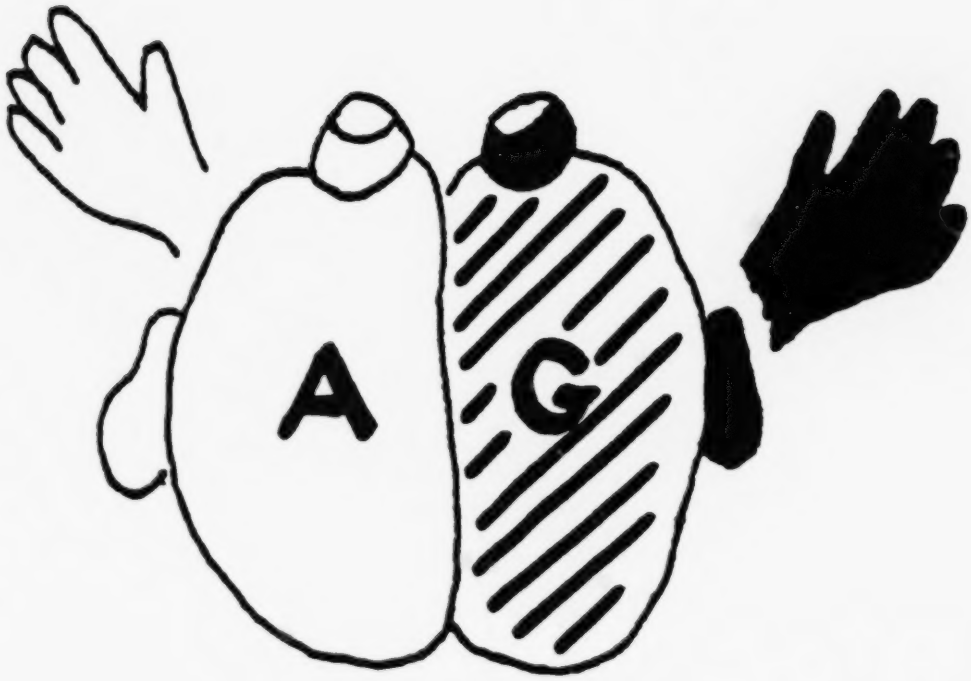

Figure 3. Laterality Profile Which Illustrates Blocked Dominance.

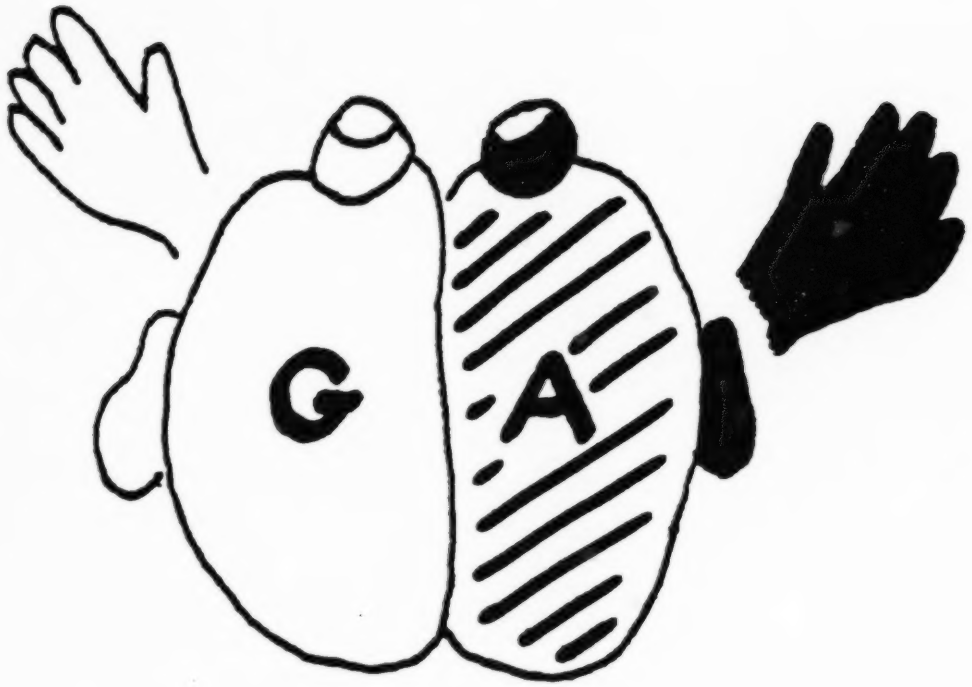

Figure 4. Laterality Profile Which Illustrates Transposed Hemispheres.

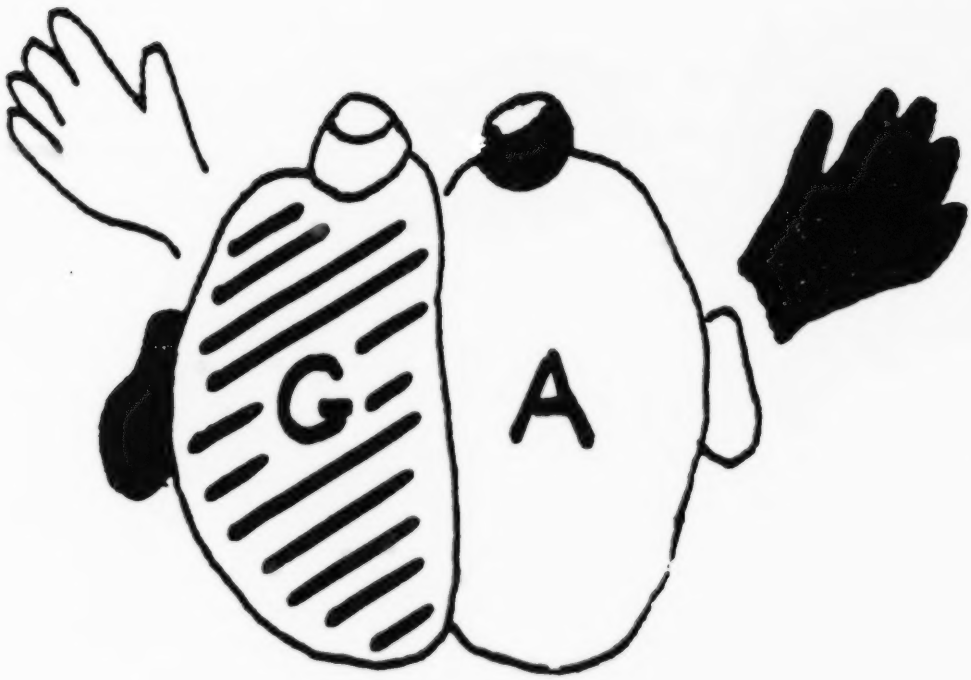

Figure 5. Laterality Profile Which Illustrates Transposed Hemispheres and Mixed Dominance.

Figure 6. Brain Buttons. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 7. Earth Buttons. (Reprinted with permission from Dennis
Paul and Dennison, Gail (1986). Brain Gym. Glendale, C
Edu-Kinesthetics.)

Figure 8. Space Buttons. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 9. Balance Buttons. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 10. Energy Yawn. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 11. Thinking Cap. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 12. Cook's Hook-up. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

Figure 13. Positive Points. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1986). Brain Gym. Glendale, CA: Edu-Kinesthetics.)

PRE CHECKS

A. Cross Crawl; X

B. Homolateral Crawl; II

STEPS

1. Cross Crawl – (with hum, eyes usually up to left)
2. Homolateral Crawl – (with count, eyes usually down to right)
3. Integration Metaphor – slowly join left and right hands together
4. Cross Crawl – look in all directions
5. Homolateral Crawl – look in all directions
6. Cross Crawl and think of X

POST CHECKS

A. Cross Crawl; X

B. Homolateral Crawl; II

Complete process with Cross Crawl and X

Celebrate!

Figure 14. Dennison Laterality Repatterning. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1989). Brain Gym Handbook. Glendale, CA: Edu-Kinesthetics.)

ACTION BALANCE FOR LISTENING

Pace

Pace goal

For what action or situation would you like to listen more effectively?

Do pre-activity

Put goal into action and/or role play the situation.
Turn your head to the left and right.
Listen/think/remember.

Do learning menu

The Owl
The Elephant
Thinking Cap

Do post-activity

Repeat all pre-activities and notice positive changes.

Celebrate and anchor the goal!

Figure 15. Action Balance for Listening. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1989). Brain Gym Handbook. Glendale, CA: Edu-Kinesthetics.)

ACTION BALANCE FOR WHOLE BODY MOVEMENT

Pace

Pace goal

For what whole body action* or situation would you like to work within the midfield more effectively?

Do pre-activity

Put the goal into action and/or role play the situation.

Do learning menu

Dennison Laterality Repatterning, pages 18-20.

Do post-activity

Repeat the pre-activities and notice positive changes.

Celebrate and anchor the goal!

Figure 16. Action Balance for Whole Body Movement. (Reprinted with permission from Dennison, Paul and Dennison, Gail (1989). Brain Gym Handbook. Glendale, CA: Edu-Kinesthetics.)

DRINK WATER

BREATHING:
Inhale through the nose while touching the tip of the tongue to the roof of the mouth just behind teeth, then drop tongue and exhale through the mouth. Use this breathing pattern for all activities.

BRAIN BUTTONS:
Massage points just below the collarbone, to the left and right of sternum with one hand, while holding the other hand over the navel

COOK'S HOOK-UP:
1. In a seated position, take the hand that you write with and grasp the ankle of the opposite foot (ie right hand to left ankle). Then place the palm of the other hand over the ball of the foot.
2. Uncross your legs and place your feet flat on the floor. Make an imaginary ball with your fingertips meeting in front of the heart.

POSITIVE POINTS:
Place two fingers on the points on your forehead, just above the eyes and halfway between the hairline and eyebrows. Hold with just enough pressure to pull the skin taut.

INTEGRATION:
Imagine the left brain in the left hand and the right brain in the right hand and slowly bring both hands together and interlace your fingers in front of your heart while thinking "I am one."

CROSS CRAWL:
Coordinate the movement of the arms and legs in a marching fashion. As the left leg comes up, the right arm crosses the midline to touch the left knee, and as the right leg comes up, the left arm touches the right knee.

Figure 17. Seven Minute Tune-Up

Table 1

Heterolateral vs. Homolateral Processing

	Total	Heter	%	Homo	%
5th and 6th grade "normal students"	262	229	87.4	33	12.6
Mental health staff	48	44	92.0	4	8.0
Juvenile Detention Centers	28	1	3.6	27	96.4
Ogden Elementary Resource	110	2	1.8	108	98.2
Middle School Resource	54	4	7.3	50	92.6
IQ's 75 or less	30	1	3.4	29	96.6
Students referred for testing	48	5	10.4	43	89.6

Statistics by Robert Eyestone, Educational Psychologist with the Weber County Mental Health Department

** Adapted with permission from Dennison, Gail (1988). Heterolateral or homolateral processing, Brain Gym Magazine, 2 (2), 2.

Table 2

BRAIN GYM™ Menu by Dimension

MIDLINE MOVEMENTS
(Laterality Dimension)

Cross Crawl
Lazy 8's
Double Doodle
Alphabet 8's
The Elephant
Neck Rolls
The Rocker
Belly Breathing
Cross Crawl Sit-ups
The Energizer

LENGTHENING ACTIVITIES
(Focusing Dimension)

The Owl
Arm Activation
Footflex
Calf Pump
Gravity Glider
The Grounder

DEEPENING ATTITUDES
(Centering Dimension)

Cook's Hook-ups
Positive Points

ENERGY ACTIVITIES
(All Dimensions)

Water
Brain Buttons
Earth Buttons
Balance Buttons
Space Buttons
Energy Yawn
Thinking Cap

CH_SP032446
PDAT_Apr90
LEVEL_1
AUTH_Sifft, Josie M.
TITLE_Educational Kinesiology: Empowering Students and Athletes Through Movement.
PUBTYPE_150; 141
NOTE_Paper presented at the Annual Meeting of the American Alliance for Health, Physical Education, Recreation and Dance (New Orleans, LA, March 28-31, 1990).
GEO_U.S.; California
DESC_*Brain Hemisphere Functions; *Teaching Methods; *Kinesthetic Methods; *Kinesthetic Perception; *Athletes; Stress Management; Neuropsychology
IDEN_*Educational Kinesiology
ABST_This workshop is designed to provide teachers and coaches with hands-on experiences regarding the field of Educational Kinesiology (Edu_K) and its influence on learning and performance. Edu-K is a practical and dynamic methods which utilizes simple body movements to integrate the functioning of the brain. It was designed by Dr. Paul Dennison in 1981 by utilizing techniques and information from many different fields, including yoga, acupuncture, growth and development, and brain research. Dennison suggests that when the individual is under stress, the body tends to act from only one hemispheric mode, thus eliminating the proper balance needed for optimal functioning. Edu-K activities, called "Brain Gyms" are used to balance the hemispheres, thereby allowing them to work more efficiently. They reduce the blockages caused by stress and allow the body to function in its optimal state. Recent studies regarding Edu-K have indicated positive shifts in learning and performance in the areas of reading, writing, mathematics, balance, and response time as a result of utilizing the "Brain Gym" activities. (Author)